



RUTH
WITKIN'S

Programs for your
Apple IIe
from inCider magazine

SUCCESS with **AppleWorks II**

**10 easy-to-use
applications on a disk
that will get the
power of AppleWorks
working for you!**



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INTRODUCTION

Hot on the heels of *Success With AppleWorks I* come 10 more ready-to-run templates for the spreadsheet, database, and word processor. If you're new to AppleWorks, playing around with the templates can get you well on your way to true proficiency. If you're already working well with AppleWorks, you'll find tips and techniques that can make you even better.

THE TEMPLATE DISK

All the templates are conveniently stored on one disk. This disk doesn't contain any AppleWorks system files, so you will need the AppleWorks program (Startup and Program disks, version 2.0) to run the templates. Before you do anything else, use the System Utilities disk that came with your computer to make at least one working copy of the template disk. Store the original in a safe place and work with the copy. Leave the write-protect notch on the copy uncovered so you can write to disk as you explore the templates.

Loading the Template Disk

Loading the template disk is the same as loading your own data disk. With a two-drive system, insert the template disk in drive 2 on the IIs, IIfx, and II+ or in the external drive on the IIc. Start the AppleWorks program from drive 1 on the IIs, IIfx, and II+ or from the built-in drive on the IIc. With a one-drive system, start AppleWorks, then replace the Program disk with the template disk.

At the AppleWorks Main Menu, press the return key twice to confirm *Add files to the Desktop* and *Get files from The current disk*. You now see the template disk menu and two types of files—those with the extension EX and those without. The EX, which stands for EXample, identifies the templates that contain practice information. The non-EXs

are ready for your entries. I recommend you start with the EX version to get a good understanding of how the template works.

RULES OF THE GAME

Rules of the game, called *conventions*, explain how information is presented and the way things work. Here are the conventions that apply to *Success With AppleWorks II*:

Type Styles. Phrases that appear on the AppleWorks screen, such as *Get a report format*, and certain spreadsheet formulas, such as *B16/(100*12)*, are shown in italics in the handbook to distinguish them from the surrounding text. Keystrokes that activate a command, such as **PA**, and information that you type, such as **12**, are shown in bold.

Confirmation. The word *confirm* in the handbook, as in confirm *All*, means that you press the return key to accept the proposed (default) selection, in this case *All*.

Keystrokes. When you see such key combinations as OA-N, hold down the open apple key and type N. To move around quickly in a template, use keys OA-1 to OA-9 to jump the cursor in proportional increments—by rows in a spreadsheet, records in a database, and lines in a document.

Cursors. AppleWorks has an insert cursor (a flashing underline) and an overtype cursor (a flashing rectangle). Pressing OA-E switches between them. Most of the time it doesn't matter which cursor you use. So that we are all operating on the same wavelength, work with the insert cursor unless the instructions say otherwise.

Cell Protection. The formula cells on every spreadsheet are protected against accidental change. AppleWorks won't accept anything you try to type into these cells. If you must change a formula, unprotect the formula cell in this way: With the cursor on the cell, press OA-L, hit Return, and type **PA**. Make your change and protect the cell afterward (press OA-L, hit Return, and type **PN**).

Recalculation. Manual recalculation is in effect on every spreadsheet. This speeds up data entry because you don't have to wait for recalculation to take place each time you make a change. When you want to recalculate, simply press OA-K. If you prefer to work with automatic recalculation turned on, press OA-V, type **RF**, and press Return.

THANKS

Many thanks to Deborah de Peyster, Editor in Chief of *inCider*, for asking me to create both volumes of *Success With AppleWorks*, to Paul Finch at CW Communications for his enthusiastic support of this project, to Eileen Terrill for fine-tuning my words, to Lafe Low for sitting at the other end of the modem, and to Donna Wohlfarth, who designed the handbook.

My appreciation to everyone at *inCider*—in particular Eileen Terrill, Lafe Low, and Ellen Otis—for taking part in the metamorphosis from modem to print of my “AppleWorks in Action” column every month.

Ruth K. Witkin

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CAR LOAN

Compare your options between two different car loans. Side by side, this spreadsheet will calculate your exact costs and guide you to the right decision.

Category:

Spreadsheet

CAR LOAN lets you compare car deals offered by car dealers. All you do is enter the price of the car (including options), registration and fees, initial deposit and down payment, interest rate, and term of the loan. The formulas then calculate the sales tax, total cost, amount of the loan, term in months, monthly loan payment, annual loan payment, total loan payment, total interest charge, and the dollar difference between each car.

PLAYING AROUND WITH THE EXAMPLE

Load CAR LOAN.EX from the template disk menu; AppleWorks brings up the Review/Add/Change screen containing the spreadsheet shown in the Figure. Before you print, press OA-O to bring up the Printer Options screen. I reduced the top margin from the standard one inch to one-half inch because I prefer this look, even on a smallish spreadsheet, and I set narrow left and right margins to center the spreadsheet on the page. CAR LOAN prints at the standard 10 characters per inch. Now press the escape key. Turn on your printer and print CAR LOAN: Press OA-P, confirm *All*, and select your printer. Enter today's date and confirm one copy.

The Formats

I set a standard value of Commas with two decimal places, then formatted the cells containing the term in years and months (rows 17 and 18) for Commas with no decimal places. Clearly the numbers in these cells will never be large enough to need commas. The advantage to using the Commas format throughout—instead of leaving the term

CAR LOAN CALCULATOR

	Sonesta (1)	Madrigal (2)	Diff (2-1)
Price of Car	9,844.00	12,553.00	2,709.00
Rustproofing	250.00	269.00	19.00
Sales Tax (8%)	807.52	1,025.76	218.24
Registration/Other Fees	35.00	36.50	1.50
NYS Inspection	8.00	8.00	0.00
Total Cost	10,944.52	13,892.26	2,947.74
Deposit	50.00	50.00	0.00
Down Payment	1,500.00	1,500.00	0.00
Amount Financed	9,394.52	12,342.26	2,947.74
Annual Interest Rate (%)	7.90	13.90	6.00
Term in Years	3	5	2
Term in Months	36	60	24
MONTHLY LOAN PAYMENT	293.96	286.54	(7.41)
Annual Loan Payment	3,527.48	3,438.52	(88.96)
Total Loan Payment	10,582.45	17,192.60	6,610.15
Total Interest Charge	1,187.93	4,850.34	3,662.41

Figure. The CAR LOAN spreadsheet. The shaded areas show the base cell locations of the formulas.

cells in the Appropriate format—is that all the numbers right-align perfectly.

About the Formulas

The Table shows the formulas. The high performance formula in B21 uses the equation **Payment = Loan*Rate^Term** to calculate equal monthly payments including principal and interest during the life of the loan. To get the monthly interest rate, the formula multiplies the annual rate by 12, which appears as **B16/(100*12)**. Copied to C21, the formula performs the same calculations for the other car. You'll get more mileage out of this formula in the HOMEPAY spreadsheet, where it calculates payments on a mortgage.

Formula Name	Location*	Formula**	Description
Sales Tax (8%)	B7 and C7	+ B5 + B6*.08	Calculates a sales tax of 8% on the price of the car plus rustproofing.
Total Cost	B11 and C11	@SUM(B4:B10)	Adds the entries in B5 through B9. (The formula includes the lines in B4 and B10, which tells AppleWorks to add the entries in any rows you later insert between rows 4 and 10.)
Amount Financed	B14	+ B11 - B12 - B13	Subtracts the deposit and down payment from the total cost of the car.
Term in Months	B18	+ B17*12	Multiplies the term in years by 12.
Monthly Loan Payment	B21	+ B14*B16/(100*12)/(1 - (1 + (B16/(100*12)))^ - B18))	Calculates the monthly loan payment.
Annual Loan Payment	B22	+ B21*12	Multiplies the monthly loan payment by 12.
Total Loan Payment	B23	+ B22*B17	Multiplies the annual loan payment by the term in years.
Total Interest Charge	B24	+ B23 - B14	Subtracts the amount financed from the total loan payment.
Differences Between the Deals	D5 and other cells in column D	+ C5 - B5	Subtracts each Sonesta entry from the corresponding Madrigal entry.

* The formula is entered in the first cell shown (base cell) and copied to the others.

** How the formula looks in the base cell. When it's copied, AppleWorks adjusts the relative cells accordingly.

Table. The formulas in the CAR LOAN spreadsheet.

WORKING WITH THE TEMPLATE

The CAR LOAN template contains the same formats and formulas as CAR LOAN.EX. The ERROR messages appear in cells containing formulas that have no numbers to work with. When you enter your own numbers and recalculate (OA-K), those cheery ERROR messages will disappear.

You can customize this template in several ways. By inserting rows, you have room to itemize optional equipment. By inserting columns, you have room to evaluate more deals.

Inserting Rows for More Options

Instead of lumping everything into the price of the car, you can itemize the optional equipment (power windows, sun roof, or anything your heart desires). All you have to do is insert rows (OA-R) and type in the options. Your best bet is to insert these rows between rows 5 and 7. If it turns out that your eyes are bigger than your wallet, you can always blank out an option or delete a row. Insert rows for non-taxable fees and services between what is now rows 8 and 10. Since the Total Cost formulas in what is now row 11 include the lines in row 4 and row 10, AppleWorks will dutifully adjust the cell references to add the entries in any rows you insert.

If you insert rows for options, you will have to modify the sales tax formulas currently in row 7 to include the new items. The formula in column B should be **@SUM(B5 . . . B8)*.08** (or your sales tax percentage). To unlock a sales tax formula cell, place the cursor on the cell, press OA-L, hit Return, and type **PA**. Protect the formula and lock the cell afterward.

Inserting Columns for More Deals

It's just as easy to compare more than two car deals. Since the Diff column works with two cars only, you have two options:

Option 1: Blank (OA-B) column D, then copy (OA-C) the entries and formulas in column C to column D and to as many more columns as

there are enticing car deals. You can get rid of column D just as easily by deleting it, but blanking saves steps because you don't then have to increase the width of the column that fills the void.

Option 2: Copy all the information in columns B, C, and D to columns E, F, and G. You can then enter a complete second set of comparisons. Increase the widths (OA-L) of the new columns to 16 characters to display the numbers properly. Otherwise, number signs (#####) will appear in the cells.

Let's say you want to explore one more deal and you opt for Option 1. With the cursor on D2, press OA-B. Type **C** and hit Return. Type **Y** to clear the protected cells, and the information in column D is relegated to oblivion. With the cursor now on C2, press OA-C and confirm *Within worksheet*. Press OA-9 to jump the cursor to C25, and hit Return. Press Right Arrow to move the cursor to D2, and hit Return again. Every reference in every formula is relative, so type **R** seventeen times. Switch to the overtype cursor (OA-E) and change whatever needs changing in column D, starting with the car name in D3. You're on your way. ■

BREAKEVEN

Eliminate costly guesswork and replace it with the facts—how much do you need to sell to break even or turn a profit. The BREAKEVEN spreadsheet will tell you.

Category:

Spreadsheet

If you plan to introduce a new product, reduce the selling price of an existing one, expand your operations, or commit your company to a costly overhaul of facilities or equipment, BREAKEVEN can help you replace guesswork with facts. Breakeven analysis reflects the relationship between operating costs, sales volume, and profit. The breakeven point is where sales are sufficient to cover costs. Above the breakeven point, the business will show a profit; below the breakeven point, a loss.

The ingredients of breakeven analysis are fixed costs (salaries, rent, depreciation, and insurance) that remain reasonably constant in relation to sales and variable costs (materials, direct wages, and commissions) that fluctuate in direct proportion to sales. Semi-variable costs, which tend to increase as sales volume increases but not in direct proportion, are usually split between fixed and variable based on their relative importance in the big picture.

PLAYING AROUND WITH THE EXAMPLE

When you load BREAKEVEN.EX from the template disk menu, AppleWorks displays the spreadsheet shown in the Figure. BREAKEVEN prints at 10 characters to the inch. I set a half-inch top margin and .8-inch left and right margins. Now turn on your printer and get ready to print. Press OA-P, confirm *All*, and select the printer. Type today's date and confirm one copy.

The Labels and Formats

To enhance legibility, I indented the labels in a stair-step fashion. Indenting is a simple matter of typing quotation marks and pressing the spacebar as many times as needed before typing the label. I set a standard value of Dollars with no decimal places, then formatted B4 and B23 for Commas with no decimal places, B5 for Dollars with two decimal places, and C7 and C8 for Percent with one decimal place. You can see all the standard values on this spreadsheet by pressing OA-? and holding down the down arrow key. Eventually, you'll get to a listing headed *Current settings of standard values*.

About the Sales Formula

The Table shows the formulas. The formula in B9 deserves the spotlight. To calculate the sales that must be generated to cover the fixed and variable costs, the formula uses the equation:

$$\text{Sales Needed (in dollars)} = (B21/(1 - C10)) + (B3/(1 - C10))$$

In English, the formula is: *Sales Needed (in dollars) = Total Fixed Costs/(1 - Variable Costs) + Breakeven or Desired Profit/(1 - Variable Costs)*.

How BREAKEVEN Works

Let's assume your company is introducing a new line of aquatic gear, one of which is an inflatable raft. The figures shown in the Figure relate to this product. In B5, you enter a wholesale price of \$14.75. In B4, you enter 70, which tells AppleWorks that your variable costs are 70% of the selling price. In B15 through B19, you itemize your fixed costs, which add up to \$126,800 in B21. In B3, you enter \$50,000, your desired profit. You press OA-K to recalculate. Instantly, the formulas produce these results: To achieve a profit of \$50,000, you need \$589,333 in sales, which works out to 39,955 units. At that level of operations, your variable costs are \$412,533 and your gross profit is \$176,800. Column C shows each entry as a percent of sales.

Now that you know what it takes to produce a \$50,000 profit, you want the results at the breakeven point. Place your cursor on B3 and type a zero. Press OA-K. At breakeven, you need sales of \$422,667, or 28,665 units. Your variable costs are \$295,867 and your gross profit is \$126,800.

Formula Name	Location*	Formula**	Description
Sales Needed (in dollars)	B7	$(B21/(1 - C10)) +$ $(B3/(1 - C10))$	Calculates the sales dollars that must be generated to cover the fixed variable costs.
Variable Costs	B10	$+ B9*(B4/100)$	Multiplies the sales by the variable costs as a percent of sales.
Gross Profit	B12	$+ B9 - B10$	Subtracts the variable costs from the sales.
Total Fixed Costs	B21	@SUM(B14,B20)	Adds the fixed costs in B15 to B19. (The formula includes empty cell B14 and the line in B20, which tells AppleWorks to add the entries in any rows you later insert between rows 14 and 20.)
Net Profit	B23	$+ B12 - B21$	Subtracts the total fixed costs from the gross profit.
Sales Needed (in units)	B25	$+ B9/B5$	Divides the sales dollars by the unit selling price.
Entry as a Percent of Sales	C10 and other cells in column C	$+ B10/B9$	Divides the variable costs by sales.

* The formula is entered in the first cell shown (base cell) and copied to the others.

** How the formula looks in the base cell. When it's copied, AppleWorks adjusts the relative cells accordingly.

Table. The formulas in the *BREAKEVEN* spreadsheet.

WORKING WITH THE TEMPLATE

The BREAKEVEN template contains the same formats and formulas as BREAKEVEN.EX. It's ready for your input, so think of a product, and enter reasonable numbers. The formatting lets AppleWorks add all the dollar signs, commas, and percentages, so don't type them. The input cells are B3 (enter a zero for breakeven of the amount of desired profit), B4 (variable costs as percent of sales, which you enter as a whole number), B5 (price per unit), and B15 through B19 (itemized fixed costs). Manual recalculation is in effect, so press OA-K to recalculate when you're done.

Handling Forward References

When automatic recalculation is in effect, you're likely to run into an AppleWorks quirk that can be perplexing unless you understand what's

happening. To see what I mean, turn on automatic recalculation: Press OA-V, type **RF**, and press return.

Let's suppose you hire another salesperson. Place the cursor on B15 and increase the amount by 30000. As you watch, recalculation takes place but with a strange result. The total fixed costs in B21 changed but the sales in B9 didn't—here's why.

In the AppleWorks scheme of things, calculation occurs by column from the top of the spreadsheet to the bottom, which makes the relative location of formulas important. When one formula needs the calculation of another in a cell below to do its own calculation, you have a condition called a *forward reference*. The sales formula in B9 contains a forward reference to the fixed costs in formula B21. AppleWorks bypassed the sales formula before the fixed costs formula calculated. Therefore, the sales formula didn't have a chance to do its work. The solution is simple. When you change any number on this spreadsheet, press OA-K to calculate again. Your results should now be accurate. You can sometimes avoid forward references by changing the order of calculation to rows instead of columns (OA-V). It all depends on the layout of your spreadsheet and formulas. Give it a try. ■

BREAKEVEN ANALYSIS

B/E (0) or Desired Profit	\$50,000	
Variable Costs as % of Sales	70	
Price per Unit	\$14.75	
		% of Sales
Sales Needed (in dollars)	\$589,333	100.0%
Variable Costs	\$412,533	70.0%
Gross Profit	\$176,800	30.0%
Fixed Costs		
Payroll	\$92,500	15.7%
Rent	\$10,700	1.8%
Utilities	\$2,400	.4%
Insurance	\$3,200	.5%
All Other	\$18,000	3.1%
Total Fixed Costs	\$126,800	21.5%
Net Profit	\$50,000	8.5%
Sales Needed (in units)	39,955	

Figure. The BREAKEVEN spreadsheet. The shaded areas show the base cell location of the formulas.

MENU

Planning for holiday feasts or everyday meals can be easier with AppleWorks. Create your own tantalizing menu with this word processor template.

Category:

Word Processor

MENU is one of the many charming things you can do with the AppleWorks word processor. All it takes is a bit of imagination and a lot of formatting. This menu tells your guests what to expect for Thanksgiving dinner, but you can use a menu at any other special occasions or at no special occasion.

PLAYING AROUND WITH THE EXAMPLE

When you load MENU from the template disk menu, AppleWorks brings up the Review/Add/Change screen containing the Thanksgiving menu. At first sight, the menu seems to be disembodied lines. Get a closer look at it. Press Ruler keys OA-4 through OA-7 or move the cursor up and down.

About the Formatting

Press OA-Z to display the printer options and the dotted rectangles (called "blots") where I pressed the return key to end a paragraph or insert a blank line. Again, run the cursor up and down.

The printer options take two forms: A caret (^) and a short dashed line followed by text. Here's an explanation of what the options are, why I used them, and, in parentheses, where they appear in the menu:

- To produce equal top and bottom margins, I changed the standard top margin of 0.0 inches and the standard bottom margin of 2.0 inches to 1.0 inch (lines 1 and 2). All the lines are centered and none wrap around to the next line down, so I left the left and right margins at the standard 1.0 inch.

If you want to change a margin setting, you don't have to delete the current setting first. You can just place the cursor on the margin indicator, press OA-O to bring up the Printer Options screen, and enter the new setting. The same applies to character size. If you want to delete the current setting, place the cursor on the indicator, press OA-D, and hit Return.

- Centering each line (starting with line 3) gives the menu its distinctive design and a touch of flair.

- THANKSGIVING and MENU (lines 4 and 12) are printed as large as AppleWorks can make them—four characters to the inch.

- The caret before THANKSGIVING (line 5) starts boldface. Boldface makes a heading really stand out and adds variety to a layout. You don't have to end boldface at the end of a line because it cancels itself automatically. You'll find the boldface caret before the text in lines 8, 10, 14, and other headings.

AppleWorks uses the same caret to indicate different print options, not only boldface. In a document that has many carets, you can tell which caret does what by placing the cursor on the caret. The entry line at the bottom of the screen describes what the caret does.

- Proportional spacing (line 6) gives each character only the width it needs, unlike standard spacing, which gives every character the same width. Therefore, a skinny "i" takes up less room than a chubby "w." Of the two AppleWorks proportional fonts, a *Proportional-2* character is a bit wider than a *Proportional-1*.

- The rest of the format options switch the characters back and forth between Proportional-2 (line 16 and others) and eight characters to the inch (line 17 and others).

Now turn on your printer and print the menu so you can see the finished product. Press OA-P to select the Print command, confirm *Beginning*, select the printer, and confirm one copy.

When the printer stops, press OA-9 to jump the cursor to the end of the menu, where AppleWorks greets you with an *End of Page* marker. AppleWorks produces this marker every time you print a document or press OA-K to calculate the page numbers. Any change, even pressing OA-O to bring up the Printer Options screen, causes the marker to disappear. It reappears the next time you print or press OA-K.

WORKING WITH THE TEMPLATE

When you load MENU, you'll find just about the same document as MENU.EX for the simple reason that it can be confusing to find printer options and no text. Your best approach is to overtype the text as much as possible.

These keys move the cursor through the menu: Left Arrow and Right Arrow move the cursor one character at a time in the direction of the arrow; OA-Left Arrow and OA-Right Arrow hop the cursor from word to word; Down Arrow and Up Arrow move the cursor one line at a time. Keys OA-1 through OA-9 (the AppleWorks Ruler) jump the cursor vertically through the text in proportional increments. Use the insert cursor to insert a character; the overtype cursor to overtype a character, and the delete key to delete a character.

To delete an item, place the cursor on the first character in the line, press OA-D, press OA-Right Arrow until the entire line is highlighted, and hit Return. To insert an item, place the cursor on the blot at the end of the previous line and hit Return. Your cursor is now on the new blot. Centering occurs as you type.

The key to this menu is a lively imagination. Try to describe foods creatively and vary the length of the lines, both of which enhance the design. If an item is short, like Cole Slaw, preface it with something sparkley—unless a short line of text is more eye-appealing.

Print enough menus so that every guest gets one. You can, of course, print one and run off the others on a copy machine. Printed or copied, use colored bond, textured, or laid paper to make the menu look even more special.

And bon appetit! ■

THANKSGIVING

Thursday, November 26, 1987

at the Witkin house

MENU

Appetizers

Whole Fresh Pineapple, Sliced and Garnished with Candied Cherries
Anchovies and Caponata
Fresh Chilled Cantelope Slices

Soup de Jour

Home-made Chicken Broth with Noodles

Main Course

Plump Juicy Turkey with Gravy
Stuffing Seasoned to Chef's Taste
Sweet Potato Pie a la Grandma Topped with Baby Marshmallows
Steamed Cauliflower
Home-made Cole Slaw
Cranberry Sauce a la Ocean Spray
Fresh Tossed Salad with Choice of Dressings
Pickles and Olives
Rolls and Butter

Karen's (Mostly) Home-Baked Desserts

Mouth-watering Pecan Pie
Scrumptuous Chocolate Pudding Pie
Smooth and Creamy Cream Cheese Pound Cake
Almond Cookies
Figs and Nuts
Vanilla Ice Cream
Fresh Fruit and Assorted Cheeses
Desserts available with Chocolate Syrup or Whipped Topping

Beverages

Soda (regular or diet), Water, Milk, Iced Tea
Hot Coffee or Hot Tea with Lemon or Sweet Cream
Choice of Liquor, Beer, or Wine

Figure. The Thanksgiving dinner menu.

INCOME

Keep all your sources of income in line. Whether you have a single- or double-income family, the INCOME spreadsheet will help you track your income and plan your budget.

Category:

Spreadsheet

INCOME lets you list income from an array of sources including salaries, commissions, self-employment, interest, dividends, business profits, annuities, royalties, and family gifts. It provides for the income of two earners, but you can later expand it to include anyone else who contributes to the family coffers. When you enter each earner's current and projected income, gross pay, and net pay, the formulas produce the total monthly income for each earner, combined monthly and yearly income, monthly gross pay, and monthly net pay. If you are paid weekly, every two weeks, or twice a month, a handy income calculator computes your monthly income, which is essential when you budget monthly.

PLAYING AROUND WITH THE EXAMPLE

Load INCOME.EX from the template disk menu, and AppleWorks brings up the spreadsheet shown in Figure 1. INCOME prints at the standard 10 characters to the inch. It has small (.04 inches) left and right margins and a one-half (.05) inch top margin. You can see my print settings by pressing OA-O. Turn on your printer. Press OA-P, confirm *All*, and select the printer. Enter today's date and confirm one copy.

INCOME SUMMARY
as of December 1, 1987

=====				
<----- EARNER 1 -----><----- EARNER 2 ----->				
SOURCES OF INCOME (MONTHLY)	Current	Next Year	Current	Next Year

Earned Income:				
Salary, wages (net)	1,551	1,805	1,488	800
Overtime (net)	143	0	0	0
Commission, bonus (net)	0	0	260	0
Self-employment	0	200	0	200
Savings & Investments:				
Interest	12	25	12	25
Dividends	17	50	17	50
Rental property	0	0	0	0
Business interests	0	0	0	0
Pensions & Annuities				
Employer pensions	0	0	0	0
Retirement (IRA, Keogh)	0	0	0	0
Social security, annuities	0	0	0	0
Other Income:				
Child support	0	0	0	0
Alimony	0	0	0	0
Unemployment, disability	0	0	0	0
Estates, trusts	0	0	0	0
Family gifts, contributions	0	0	0	0
	-----	-----	-----	-----
Total Monthly Income	1,723	2,080	1,777	1,075

Combined Income	Monthly		Yearly	
Current	3,500		42,000	
Next year	3,155		37,860	
=====				
EARNED INCOME CALCULATOR	Amount	Weekly	Monthly	Yearly

If Paid Once A Week:				
Gross pay	560		2,427	29,120
Net pay	358		1,551	18,616
If Paid Every Two Weeks:				
Gross pay	984	492	2,132	25,584
Net pay	686	343	1,486	17,836
If Paid Twice A Month:				
Gross pay	1,224	565	2,448	29,376
Net pay	820	378	1,640	19,680
=====				

Figure 1. The INCOME spreadsheet. The shaded areas show the base cell locations of the formulas.

About the Formulas

The Table shows the formulas. Each SUM formula in row 31 includes its respective empty cell in row 7 and its dashed line in row 30. In this way, you can later insert rows for sources of income not listed here, and AppleWorks will adjust the formula to add the new entries.

Viewing and Printing the Formulas

A formula printout is handy when you troubleshoot a spreadsheet, need the same formula on another spreadsheet, or work on a spreadsheet created by someone else. But it serves its purpose best when adversity strikes and you have to recreate the spreadsheet from scratch. You can print the formulas as you would any spreadsheet or hardcopy the screen.

Before you can print the formulas, you have to display them on screen. Press OA-7 to jump the cursor to row 39, which will give you a good view of the action. Now press OA-Z to zoom into the formulas.

As you can see, the formulas below row 35 are fully displayed but the SUM formulas in row 31 are truncated, a common condition easily remedied by increasing the column widths. Do it now. Place the cursor on B31 and press OA-L. Type **C**, press Right Arrow three times, and hit Return. Type **C**, press OA-Right Arrow three times, and hit Return again. Now all the formulas are fully displayed.

The following steps end with the formula spreadsheet shown in Figure 2. First, check the effect the column width increases have on the print width: Press OA-P and confirm **All**. The Print screen shows that INCOME is now 84 characters wide. At the current 10-character setting, you can print only 72 characters per line, which leaves 12 characters of width in limboland. You could reduce the width of the labels column, but the better approach is to use a smaller character. First, press Esc to display the spreadsheet. Press OA-O, type **Cl**, and press Return. Type **12** and hit Return again. Now check the print width again: Press OA-P, then Return. AppleWorks shows that you can now print 86 characters per line. Perfect. Be sure your printer is on. Press OA-P, confirm **All**, select the printer, and confirm the date and one copy.

To hardcopy the screen, position the spreadsheet so that row 31, which contains the SUM formulas is at the top. Now press OA-H.

INCOME SUMMARY
as of December 1, 1987

<----- EARNER 1 -----><----- EARNER 2 ----->				
SOURCES OF INCOME (MONTHLY)	Current	Next Year	Current	Next Year

Earned Income:				
Salary, wages (net)	1551	1805	1488	800
Overtime (net)	143	0	0	0
Commission, bonus (net)	0	0	260	0
Self-employment	0	200	0	200
Savings & Investments:				
Interest	12	25	12	25
Dividends	17	50	17	50
Rental property	0	0	0	0
Business interests	0	0	0	0
Pensions & Annuities				
Employer pensions	0	0	0	0
Retirement (IRA, Keogh)	0	0	0	0
Social security, annuities	0	0	0	0
Other Income:				
Child support	0	0	0	0
Alimony	0	0	0	0
Unemployment, disability	0	0	0	0
Estates, trusts	0	0	0	0
Family gifts, contributions	0	0	0	0

Total Monthly Income	@SUM(B30...@SUM(C30...@SUM(D30...@SUM(E30...			

Combined Income	Monthly		Yearly	
Current	+B31+D31		+B35*12	
Next year	+C31+E31		+B36*12	
=====				
EARNED INCOME CALCULATOR	Amount	Weekly	Monthly	Yearly

If Paid Once A Week:				
Gross pay	560		+B42*52/12	+D42*12
Net pay	358		+B43*52/12	+D43*12
If Paid Every Two Weeks:				
Gross pay	984	+B46/2	+B46*26/12	+D46*12
Net pay	686	+B47/2	+B47*26/12	+D47*12
If Paid Twice A Month:				
Gross pay	1224	+B50*24/52	+B50*2	+D50*12
Net pay	820	+B51*24/52	+B51*2	+D51*12

Figure 2. A printout of the formulas in the INCOME spreadsheet.

When the printer stops, press Down Arrow four times. Press OA-H again to hardcopy the rest of the formulas. You didn't save the formula version, so you can simply remove it from the Desktop and reload the original INCOME from disk. If you do choose to save a formula version, the next time you load it, you'll see the formula results, not the formulas. All you need do is press OA-Z to display the formulas again.

Formula Name	Location*	Formula**	Description
Total Monthly Income	B31, C31, D31, E31	@SUM(B30 . . . B7)	Adds each source of each Earner's income.
Combined Monthly Income (Current)	B35	+ B31 + D31	Adds the current monthly income of Earner 1 and Earner 2.
Combined Monthly Income (Next Year)	B36	+ C31 + E31	Adds the projected monthly income of both earners.
Combined Yearly Income (Current)	D35 and D36	+ B35*12	Multiplies the current or projected combined monthly income by 12.
Weekly, If Paid Every Two Weeks	C46 and C47	+ B46/2	Divides gross or net pay by 2.
Weekly, If Paid Twice a Month	C50 and C51	+ B50*24/52	Multiplies gross or net pay by 24, then divides the result by 52.
Monthly, If Paid Once a Week	D42 and D43	+ B42*52/12	Multiplies gross or net pay by 52, then divides the result by 12.
Monthly, If Paid Every Two Weeks	D46 and D47	+ B46*26/12	Multiplies gross or net pay by 26, then divides the result by 12.
Monthly, If Paid Twice a Month	D50 and D51	+ B50*2	Multiplies gross or net pay by 2.
Yearly Gross Pay	E42, E43, E46, E47, E50, E51	+ D42*12	Multiplies monthly gross pay by 12. †

* The formula is entered in the first cell shown (base cell) and copied to the others.

** How the formula looks in the base cell. When it's copied, AppleWorks adjusts the relative cells accordingly.

† The formula performs the same function in the other cells.

Table. The formulas in the INCOME spreadsheet.

WORKING WITH THE TEMPLATE

The INCOME template contains the same formats and formulas as INCOME.EX. As with every template on the hotCider disk, INCOME is meant to jog your thinking about how these templates can work best for you. For example, if there's no Earner 2 in your life, blank out all the Earner 2 entries or delete the columns. If your family has an Earner 3 (or 4 or 5), insert this information. You can even modify the spreadsheet to project income beyond next year, perhaps 2, 3, or more years from now. Type the new labels, copy the formulas, enter the new numbers, and you're on your way. To get a realistic financial picture, enter income from salaries, overtime, and commissions as net amounts (what you have left after your employer deducts for income taxes, social security, disability insurance, and the like). Add in any voluntary deductions such as payroll savings or insurance plans for which you pay all or part of the premium. Enter income from self-employment, interest, dividends, and unemployment insurance as gross amounts. Assuming you are budgeting your income, you can account for voluntary payroll deductions and taxes on self-employed income in a budget spreadsheet (available as a template in *Success With AppleWorks I*). ■

NUMBERS

Store all your important numbers in this convenient database—credit cards, social security, car registration, checking account, as many as you need—and have them right at your fingertips, ready when you need them.

Category:

Database

NUMBERS is a safe and secure place to store the numbers associated with the important papers in your life—credit cards, library card, school ID cards, driver's license, car insurance, car registration, voter registration, checking account, passport, and social security card. If you lose any of these papers, you lose the number, which can be a bother to trace and replace. It also keeps track of special numbers such as the addresses, phone numbers, and birthdays of important people in your life. You can print every record in your treasure trove or pick and choose specific records.

PLAYING AROUND WITH THE EXAMPLE

When you load NUMBERS.EX from the template disk menu, AppleWorks brings up the multiple-record layout screen containing five categories and many sample records. The **WHAT** category contains a keyword that identifies the item; the **WHOSE** category names the person to whom the item belongs; **WHERE** lists the organization involved or the location of the item; **NUMBER** is simply that—a way to describe the item if you lose it; and **NOTES** holds important jottings. Behind the scenes are three spare categories for items you may want to include when you enter your own information. More about the spares shortly.

Ditto in Multiple-Record Layout

In this type of database, working in multiple-record layout saves key-strokes because you can ditto previous entries. The key to this technique is to first activate the number of records you need.

Let's say you want to insert the office addresses of two friends. Place the cursor on any category in the first *Auto* record, which is the third record on screen. Press OA-I. Immediately, AppleWorks brings up the single-record layout in the Insert New Records screen. To activate two records, press OA-Down Arrow twice. You should now see an empty *Record 5 of 42* on screen. Press OA-Z to zoom into multiple-record layout, which now shows two empty records awaiting your entries.

The cursor is in the **WHAT** column of the first empty record. Press OA-" (the ditto key) twice (don't press the shift key). An *Address* pops into both empty records. To move the cursor to the **WHOSE** column of the first empty record, press Up Arrow twice and hit Tab. Now type in a friend's first name and hit Return. Type in another friend's first name and hit Return again. Press Up Arrow twice and hit Tab again, which brings you to the **WHERE** column of the first (now not-so-empty) record. To ditto **Office**, press OA-" twice. You get the idea. Now fill in the **NUMBER** and **NOTES** categories for both records. You can ditto into categories that already contain information, which has both a plus and a minus side. On the plus side, you don't have to erase an existing entry that has outlived its usefulness; on the minus side, you risk overtyping a useful entry unless you exercise caution.

The Reports

NUMBERS contains two formats that produce the following reports:

- 1) A listing of all the records in the database in tables format.
- 2) A report showing four records selected by specific criteria.
- 3) A listing of all the records in labels format with category names that identify each entry.

Report 1: All the Records in Tables Format

Figure 1 shows a report that lists all the records. To see the report format, press OA-P. You now have the Report Menu before you. Confirm **Get a report format**, and here's the Report Catalog screen. Confirm **LOTSA NUMBERS**, and here's the Report Format screen with its array of commands, cursor movements, and the first four categories in the first three records. Hit the Tab key five times.

File: NUMBERS.EX

Report: LOTS A NUMBERS

WHAT	WHOSE	WHERE	NUMBER	NOTES
Address	Dick	Office	345 Fifth Ave, NYC 10027	-
Address	Annie	Office	89 Main St, Redford 11749	-
Auto	D&A	National Insur	5046-B24	Inspect July
Auto	D&A	Vehicle ID	42L39R374	Expires Mar 89
Auto	D&A	License Plate	101-SSS	-
Auto	D&A	Auto Club	597-6-114	Renew August
Birthday	Dick	-	August 22, 1958	-
Birthday	Annie	-	June 21, 1961	-
Cemetery	D&A	Lindenwood	Lot 72, Plots 16-17	-
Checking	D&A	Shoreline Trus	789012	-
Credit	Annie	Essoil	317-762 380 2	Expires Jul 88
Credit	Annie	Dandy Jeans	876908	Expires Apr 88
Credit	Dick	Woodruff Store	195 56 438X	No Expiration
Credit	D&A	VistaCard	4240 760 002 86	Expires Sep 89
Credit	D&A	Banyon Oil	765A-678 53	Expires Jun 88
Credit U	Dick	Commuter Lodge	1234-F	-
Donor	Annie	Abner Blood Gr	A-5608	Type A+
Driver	Dick	NY State	S0865 345678-39	Expires Aug 88
Driver	Annie	NY State	S9836 115425-42	Expires June 89
Election	Annie	Abner HS	B-87319	-
Election	Dick	Abner HS	B-87310	-
Insuranc	Dick	Equity Life	345-1234Z	Life Term
Insuranc	Annie	Equity Life	176-9753B	Life Term
Insuranc	Dick	Fidelity Mutua	89C-43-32	Disability
Insuranc	D&A	HOMY	455 987-4321	Homeowners
IRA	Annie	Shoreline Trus	079543.2	-
Keogh	Dick	Shoreline Trus	079543.2	-
Library	Dick	Abner Public	467 11 240	-
Library	Annie	Abner Public	467 11 239	-
Medical	D&A	Blue Star	34X678-PRW	-
Money Mk	D&A	XYZ Money Fund	074678539-8	-
Mortgage	D&A	Nickel Savings	R54-B57-K22D20	Fixed 11.5%
Passport	Dick	-	T987654	-
Passport	Annie	-	B123456	-
Phone	Dick	Office	212-555-6588	-
Phone	Annie	Office	516-555-1100	-
Savings	D&A	Shoreline Trus	1234-56X	-
Soc Sec	Dick	-	156-67-7108	-
Soc Sec	Annie	-	111-22-3344	-

Figure 1. A listing of all the records in the NUMBERS.EX database in tables format.

The cursor is now on the *len* indicator, which shows a print width of 97 characters. This count is important because it helps you select character size when you print a report. At 10 characters per inch, you can print about 80 characters per line, not nearly enough for this report. At 12 characters per inch, you can print 97 characters per line, which is perfect.

To see my print settings, press OA-O to bring up the Printer Options screen. I changed the standard character size from 10 characters per inch to 12 characters and activated the formatting option **Print a Dash when an entry is blank**. Press the escape key to return to the Report Format screen.

Now turn on your printer. Press OA-P to bring up the Print The Report screen. Select your printer, enter a date, and confirm one copy. The printer whirs and here's a report showing all the records in the database. When printing stops, AppleWorks returns you to the Report Format screen.

Report 2: Selected Records

Figure 2 shows a list of only those records that contain addresses. This report is a spinoff of LOTSA NUMBERS, and you can approach it in two ways:

- 1) Work with the LOTSA NUMBERS report format. Before you can print or view the selected records, you have to define the selection criteria and afterward return the selection to **All records**.

- 2) Duplicate the LOTSA NUMBERS report format (item 4 in the Report Menu). Once you define the selection criteria, you don't have to bother reverting the selection to **All Records** and defining again the next time. You can print or view the selected records at will. I chose this approach for you, and named the new report format **SELECTED NUMBERS**.

Now press the escape key to return to the Report Menu screen. Confirm **Get a report format**, type **2** to select **SELECTED NUMBERS**, and hit Return. Except for the third line in the upper left corner, **Selection:WHAT equals ADDRESS**, this screen is the same as the LOTSA NUMBERS screen.

Before you print, preview the selected records on screen: Press OA-P, choose **The screen**, and press the return key twice. And here's the four records that contain addresses. Press the Spacebar and the report format reappears. Your printer should still be on. Now print this report: Press OA-P, select your printer, and hit Return twice.

File: NUMBERS.EX
Report: LABELS STYLE

WHAT: Address
WHOSE: Dick
WHERE: Office
NUMBER: 345 Fifth Ave, NYC 10027
NOTES: -

WHAT: Address
WHOSE: Annie
WHERE: Office
NUMBER: 89 Main St, Redford 11749
NOTES: -

WHAT: Auto
WHOSE: O&A
WHERE: National Insur
NUMBER: 5046-B24
NOTES: Inspect July

WHAT: Auto
WHOSE: D&A
WHERE: Vehicle IO
NUMBER: 42L39R374
NOTES: Expires Mar 89

WHAT: Auto
WHOSE: D&A
WHERE: License Plate
NUMBER: 101-SSS
NOTES: -

WHAT: Auto
WHOSE: O&A
WHERE: Auto Club
NUMBER: 597-6-114
NOTES: Renew August

WHAT: Birthday
WHOSE: Oick
WHERE: -
NUMBER: August 22, 1958
NOTES: -

Figure 2. A report showing two records selected by the WHAT category.

It's your turn to select—this time only those records that apply to Dick. Press OA-R to bring up the Select Records screen. Before you can define a new selection, you have to return the selection status to **All records**, so type **Y** and hit Return.

Now press OA-R again. Type **2** and select **WHOSE** and hit Return. Confirm **equals**. Type the comparison information **Dick** and press return. You have no other comparisons, so press the escape key. The third line from the top of the screen now displays **Selection: WHOSE equals Dick**.

Before you print, view this group of selected records on screen: Press OA-P, choose **The Screen**, and hit Return twice. And here's the listing of Dick's records. Press the Spacebar to return to the Report Format screen. Now print this report: Press OA-P, select your printer, and hit Return twice. You can select, view, and print any other group of records in the same way.

Report 3: All the Records in Labels Format

Figure 3 shows the first ten records printed in labels format, which is convenient when records are so filled with information that you can't print everything in tables format. Press the escape key to return to the Report Menu. Confirm **Get a report format**, type **3** to select LABELS STYLE, and hit Return.

In this type of listing, printing a category name before each entry helps identify potentially confusing information, such as whether a phone number is in a home or office. Your cursor is in the WHAT category. To see how this works, Press OA-V and **Address** (the first entry in the WHAT category) disappears. Press OA-V again and **Address** reappears. It's as simple as that.

As in the tables report format, I activated the option that tells AppleWorks to *Print a Dash when an entry is blank*, which occurs in the WHERE and NOTES categories. To center listing, I increased the left and right margins to two inches. You can see my printer settings by pressing OA-O. When you're done, press the escape key to return to the Report Format screen.

It's time to print and your printer should still be on. A few words before you print: There are many records in this database. If you choose to stop before you get to the end, simply turn off your printer. Now type OA-P, select your printer, and hit Return twice.

WORKING WITH THE TEMPLATE

The NUMBERS template contains the same categories as NUMBERS.EX, but no records. After loading the program, AppleWorks informs you that you are about to go into the Insert New Records feature. Press the Spacebar to bring up an empty Record 1 of 1 in single-record layout, which shows five active categories and three spares.

File: NUMBERS.EX

Report: nmbrs

Selection: WHOSE equals DICK

WHAT	WHOSE	WHERE	NUMBER	NOTES	SPARE
Address	Dick	Office	345 Fifth Av		
Birthday	Dick		August 22, 1		
Credit	Dick	Woodruff Sto	195 56 438X	No Expiratio	
Credit U	Dick	Commuter Lod	1234-F		
Driver	Dick	NY State	S0865 345678	Expires Aug	
Elections	Dick	Abner HS	B-87310		
Insurance	Dick	Equity Life	345-1234Z	Life Term	
Insurance	Dick	Fidelity Mut	89C-43-32	Disability	
Keogh	Dick	Shoreline Tr	079543.2		
Library	Dick	Abner Public	467 11 240		
Passport	Dick		T987654		
Phone	Dick	Office	212-555-6588		
Soc Sec	Dick		156-67-7108		

Figure 3. The first 10 records in labels format showing the category names.

The Spare Categories

One of the things Murphy should have said is: "No sooner do you design a database, customize the screen, and create report formats, then you realize you don't have room for information you can't do without." That's the reason for spare categories. If you insert a category now, your custom work will vanish and you will have to redo it. Instead, you can simply rename a spare and make your entries there. No muss, no fuss, no redo.

Let's pretend you want a category that shows the physical location (wallet, desk, safe deposit, and so on) of each item. Here's how to rename a spare category: Press Escape, then OA-N to return to the Change Name/Category screen. Hit Return to enter the category names area. Press Down Arrow until the cursor is on the first SPARE. Press OA-E to switch to the overtype cursor. Type **LOCATION** and hit Return again. Now press Escape, then the Spacebar. You're now back to Square One with an empty Record 1 in the Insert New Records Screen.

Inserting Your Own Records

Pull out a credit card and fill the categories in Record 1 (hit Return to move past the spares). You should now see an empty Record 2 on the screen. You can make all your entries in single-record layout, but you lose the benefit of ditto in previous entries, so press OA-Z twice (once to leave Insert New Records, the other time to leave single-record layout) to switch to multiple-record layout.

Early in this chapter I described how to activate records with the Insert command (remember the two addresses?). You can do the same with the Copy command. The significant difference is that Insert provides empty records, which is traditional, while Copy provides filled records, which can be confusing. Let's chance it. To get things off to a running start, copy the record you just entered: Press OA-C and confirm **Current record**. Type **5** and hit Return. You now have six active records. Pull out five more cards (credit, library, blood bank, car registration) and spend a few moments filling in the records. Remember, OA-" replaces the current entry with the entry above.

Switching Categories on Screen

The LOCATION category (the renamed spare) is waiting in the wings for its entries. You can make these entries in single-record layout, but you lose the speed that the ditto feature offers. Instead, replace one of the viewable categories temporarily: Press OA-L to bring up the Change Record Layout screen. Hit the right arrow key four times. Now press OA-D to delete the NOTES category. Instantly, the LOCATION category fills the gap. Hit Escape twice and the multiple-record layout in the Review/Add/Change screen reappears. You can now enter where you keep the cards. To restore the screen to its original condition, return to the Change Record Layout screen (OA-L) and insert (OA-I) the NOTES category before the LOCATION category.

Inserting a Deleted Category in a Printed Report

There is no LOCATION category in the reports shown in Figures 1 through 3, so how do you print those entries? Simply insert it into a report format, say LOTSA NUMBERS. You are in multiple-record layout in the Review/Add/Change screen, so press OA-P, confirm **Get a report format**, and confirm LOTSA NUMBERS.

Now press Tab five times to move the cursor to the Len indicator. Press OA-I and AppleWorks brings up the Insert A Category screen containing the LOCATION category (formerly a spare) and two spares. I deleted all three categories when I first created the report format. Hit Return and AppleWorks inserts the LOCATION category.

Press Tab to display the Len indicator again, which now shows a print width of 110 characters—too wide to fit across one page at 12 characters to the inch but no problem at 15 characters to the inch, which prints about 120 characters. To change the character size, press OA-O to bring up the Printer Options screen. Type **CI** and hit Return. Type **15** and hit Return again. To center the report vertically, change both the left margin and the right margin to **.4**, then press Escape. Now follow the printing steps as you did before (starting with OA-P) to print the report.

You can manipulate the report in many ways to suit your needs. For instance, if 15 characters per inch is too small for your aesthetic tastes, consider deleting (OA-D) a category and printing at 12 characters to the inch. Remember, anything you've already done in these exercises and anything you are about to do now is stored in computer memory only, not on disk. If you want to save your work, press OA-S. ■

HOME PAY

*Should you buy a home or rent an apartment?
The HOME PAY spreadsheet will help you compare
the pros and cons of investing in a home
or saving your money by renting.*

Category:

Spreadsheet

HOME PAY lets you compare the dollars-and-cents differences between buying and renting a home. When you enter the basic costs of each option, actual charges and fees, your best guesses on everyday expenses and other costs, and your monthly gross income, the formulas evaluate each option in terms of immediate cash outlay, how much more one option costs over the other, the percent of your gross income spent on housing, potential tax savings on mortgage loan interest, and potential interest earned if you invest the money instead of spending it on a home purchase. You can evaluate virtually endless combinations of housing alternatives until you reach a decision you can afford to live with.

PLAYING AROUND WITH THE EXAMPLE

Load HOME PAY.EX from the template disk menu, and AppleWorks brings up the spreadsheet shown in the Figure. The margin settings are minor—just a nip at the left (.3 inches) and a tuck at the right (.2 inches). To produce relatively equal top and bottom margins, I reduced the top margin from the standard 1.0 inch to .5 inches. Every other setting remains at the AppleWorks standards, including printing at 10 characters to the inch. You can see my settings by pressing OA-O. Now turn on your printer and print HOME PAY.EX: Press OA-P, confirm **All**, and select your printer. Enter today's date and confirm one copy.

About the Layout

Lines make a spreadsheet easy to read and pleasant to look at. The clipboard is a real shortcut to entering these lines. After you create one line (using the equal sign for a double-dashed line or a minus sign for a single-dashed line), all you do is press OA-C, then **T** (for **To clipboard**) to copy it to the clipboard. Place the cursor where you want the line, press OA-C, type **F** (for **From clipboard**), and a whole new row containing the line pops into the spreadsheet. You can copy the same line from the clipboard as many times as you wish.

The line that divides the spreadsheet vertically adds a nice touch. To create this line I first reduced column C to two characters. In C3 I typed a vertical line (this character shares the backslash key in the right of the keyboard). I then copied the line down column C.

Indenting the labels groups them in a logical fashion and enhances the overall legibility of this spreadsheet. To indent, simply type quotation marks and press the spacebar as many times as you want spaces before you type a label.

The Formats

Most of the numbers on this spreadsheet are dollar amounts. A dollar sign can clutter things, so I set a standard value of Commas with two decimal places, then I gave the cells that show whole numbers the Commas format with no decimal places and those that show percentages the Percent format with no decimal places.

About the Formulas

The Table shows the formulas, several of which deserve an explanation.

- In B11 the ubiquitous loan repayment formula (last seen in the car loan spreadsheet) calculates the payments on a fixed rate mortgage based on the annual interest rate converted into months (shown as $-B10*12$ in the formula), term in years, and loan amount.
- The compounding formula in E8 calculates how much you can accrue at the end of the year based on the annual interest rate in E6 and the number of compound periods in E7, assuming you invest the cash available in E5 instead of plunking it down on a home purchase.
- The formula in E11 calculates the interest due you on your security deposit. Many state laws require landlords to deposit security funds in interest-bearing accounts. All interest earned, less administrative costs that go to the landlord, belong to the tenant.

- The IF formulas in B46 and E46 present two sides of the same coin. In B46, the Test statement checks to see if buying is more than renting; in E46, it checks if renting is more than buying. Clearly only one statement can be true at a time. Therefore, if B46 produces an amount, E46 shows zero; if E46 produces an amount, B46 shows zero.

- The SUM formulas (B20, B30, B37, E20, E30, E37) include the blank cell above the first number in the list and the line in the cell below the last number. For example, the SUM formula in B20 includes B15 and B19. This establishes a range of cells from B15 to B19. You can later insert rows anywhere within this range and AppleWorks will adjust the formula to include the new entries.

Forward References

The AppleWorks standard calculates a spreadsheet in columns, starting with formulas at the top and working downward. Several formulas need the calculation of others below them to do their calculations but recalculation has already passed them by. To be sure your results are accurate, recalculate twice (OA-K twice) each time you make a change.

Formula Name	Location*	Formula**	Description
Down Payment Amount	B7	+ B5*B6/100	Multiplies the price of the home by the down payment percent.
Mortgage Loan	B8	+ B5 - B7	Subtracts the down payment from the price of the home.
Monthly Loan Payment	B11	+ B8*B9/((100*12)/ (1 - (1 + (B9/(100* 12))^(- B10*12))))	Calculates constant monthly payments on a fixed-rate mortgage.
Annual Loan Payment	B12	12*B11	Multiplies the monthly loan payment by 12.
Total Loan Payment	B13	+ B12*B10	Multiplies the annual loan payment by the term in years.
Total Closing Costs	B20, E20, B30, E30, B37, E37	@SUM(B19 . . . B15)	Adds the home purchase closing costs. (In E20, the formula adds the initial rental costs. In B30 and E30, it adds the fixed monthly costs, and in B37 and E37, it adds the variable monthly costs.)
Fixed Monthly Costs— Mortgage Payment	B26	+ B11	Copies the monthly loan payment in B11.
Basic Monthly Costs	B39 and E39	+ B30 + B37	Adds the total fixed and variable costs.

Immediate Cash Outlay	B44	+ B7 + B20	Adds the down payment and total closing costs.
Buy Is More Than Rent—Monthly	B46	@IF(B39 – E39>0, B39 – E39,0)	Produces one of two answers, either the monthly amount by which buying exceeds renting or a zero.
Buy Is More Than Rent—Annually	B47 and E47	12*B46	Multiplies by 12 the monthly difference between buying and renting.
Buy as a Percent of Gross Income	B48 and E48	+ B39/E42	Calculates the percentage of your income you will spend monthly on basic home ownership in B48 and rental in E48.
Estimated Tax Savings, Monthly	B49	.28*(B11 + B27)	Multiplies an assumed tax bracket of 28% by the monthly loan payment to represent mortgage interest (during the first year, mortgage payments consist almost entirely of interest) plus property taxes.
Adjusted Buy, Percent of Gross	B50 and E50	(B39 – B49)/E42	Subtracts the estimated monthly tax savings from the basic monthly costs, then divides by the monthly gross income. The result is the percent of income spent on a home purchase after tax savings. Performs a similar function in E50, so you can compare both.
Cash Available to Invest	E5	+ B7 + B20 – E20	Adds the down payment and closing costs, then deducts the initial costs of renting.
Amount at End of Year 1	E8	(1 + (E6/100/E7))^(E7)*E5	Calculates cash invested plus interest based on the compound periods specified.
Estimated Monthly Earnings on Investment	E10	(E8 – E5)/12	Subtracts the cash available from its value at the end of one year and divides the result by 12.
Estimated Monthly Earnings on Rent Security	E11	.05*E17/12	Assuming the landlord puts your security into an interest-bearing account, take 5% of the security deposit and divide the result by 12.
Agent's Fee (1 Month Rent)	E16	+ E26	Copies one month's rent from E26.
Security (2 Months Rent)	E17	2*E16	Multiplies the rent by 2.
Immediate Cash Outlay	E44	+ E20	Copies the initial rental costs from E20.
Rent Is More Than Buy (Monthly)	E46	@IF(E39 – B39>0, E39 – B39,0)	Produces one of two answers—either the monthly amount by which renting exceeds buying or a zero.

Estimated Earnings on	E49	+ E10 + E11	Adds the estimated interest earned on
Investment and Security			the investment and the security.

* The formula is entered in the first cell and is called the *base cell*. It is copied to the others.

** How the formula looks in the base cell. When it's copied, AppleWorks adjusts the relative cells accordingly.

Table. *The formulas in the HOME PAY spreadsheet.*

WORKING WITH THE TEMPLATE

HOME PAY contains the same formats and formulas as HOME PAY.EX. The formulas that have no numbers to work with display ERROR messages in their cells. When you enter your own numbers, the ERROR messages will disappear.

When you are experimenting with numbers, your best approach is to overtype the existing numbers, not blank the cell. If the cell has a non-standard format (such as B6, **Down Payment**, which is formatted for Commas with no decimals), you'll blank the format also. You can always reformat, of course, but why do extra work?

Opening a Second Window

Here's the scenario: You want to test a whole lot of home prices in B5 and see the effect on the immediate cash outlay in B44—without having to tool up and down the screen. Impossible? Not with the Window command, which lets you keep two distant areas visible at the same time.

Try it now. Position the spreadsheet so that row 33 is at the top of the screen, which positions row 50 at the bottom. Place the cursor on B44. Press OA-W and type **T** to select **Top and bottom**. You've just created a second window, as indicated by the second set of lines and letters above row 44.

Now press OA-J to jump the cursor into the upper window. Hold down the up arrow key until row 3 is at the top of the screen, which positions row 13 immediately above the start of the second window.

Place the cursor on B5. Type **150000** and press Return. Automatic recalculation is turned off, so press OA-K to recalculate. The cash outlay in B44 immediately becomes 20,802.00, and all the numbers relating to the price of the home change too. You can save a spreadsheet with the second window open. The printed spreadsheet, however, won't show even a trace of another window. Now close the second window: Press OA-W and confirm **One**. ■

HOME PURCHASE VS RENT ANALYSIS

TO BUY?		TO RENT?	
Price of Home	102,500.00	Cash Available to Invest	13,407.00
Down Payment (%)	10	Annual Interest Rate	10.25
Down Payment Amount	10,250.00	Times Compounded Annually	365
Mortgage Loan	92,250.00	Amount at End of Year 1	14,853.90
Annual Interest Rate (%)	13.75	Est Monthly Earnings On:	
Term in Years	30	Cash available in E5	120.58
Monthly Loan Payment	1,074.82	Rent security at 5%	6.67
Annual Loan Payment	12,897.80		
Total Loan Payment	386,933.87		
Closing Costs:		Initial Costs:	
Lender's charges	4,227.00	Agent's fee (1 month)	800.00
Title search & fees	825.00	Security (2 months)	1,600.00
Legal fees	750.00	Painting	245.00
Total Closing Costs	5,802.00	Total Initial Costs	2,645.00
YEAR 1		YEAR 1	
Fixed Monthly Costs:		Fixed Monthly Costs:	
Mortgage payment	1,074.82	Rent	800.00
Property taxes	155.00	Air conditioner	7.00
Homeowner's insurance	25.00	Cable TV	12.00
Total Fixed Costs	1,254.82	Total Fixed Costs	819.00
Variable Monthly Costs:		Variable Monthly Costs:	
Utilities & fuel	167.00	Utilities	75.00
Maint-house & grounds	80.00	Parking	22.00
Other	75.00	Other	0.00
Total Variable Costs	322.00	Total Variable Costs	97.00
Basic Monthly Costs	1,576.82	Basic Monthly Costs	916.00
HERE'S THE BOTTOM LINE...		Monthly Gross Income	
Immediate Cash Outlay	16,052.00	Monthly Gross Income	4,800.00
Buy Is More Than Rent:		Immediate Cash Outlay	2,645.00
Monthly	660.82	Rent Is More Than Buy:	
Annually	7,929.80	Monthly	0.00
Buy as % of Gross Income	33%	Annually	0.00
Est Tax Savings, Monthly	344.35	Rent as % of Gross Income	19%
Adjusted Buy, % of Gross	26%	Estimated Earnings	127.24
		Adjusted Rent, % of Gross	16%

Figure. The HOME PAY spreadsheet. The shaded areas show the base cell locations of the formulas.

COVER LETTER

Finish off your resume with an impressive personalized cover letter. Even if you're sending out dozens of resumes, each cover letter will look like an original.

Category:

Word Processor

COVER LETTER is a form letter that accompanies a resume. This cover letter is special. While it's being printed, AppleWorks stops the printer several times so you can type in the personalized information that keys the resume to a specific job. Even if you flood the job market with resumes, each cover letter will look like one of a kind. If you haven't worked with keyboard input before, this is the time to try it.

PLAYING AROUND WITH THE EXAMPLE

Load COVER LETTER.EX from the template disk menu, and AppleWorks brings up the Review/Add/Change screen containing the document shown in the Figure. Run the cursor down its length, then up again, so you can get acquainted. Now press OA-Z to display the printer options and "blots" (dotted rectangles at the end of paragraphs and the beginning of blank lines).

About the Formatting

The only options not shown here are *Enter Keyboard* carets (^) that tell AppleWorks when to pause the printer for your input. You'll see them in the COVER LETTER template. Let's look at the options that are shown:

- The AppleWorks standard margins are meant for this kind of letter. The only thing I changed was the top margin (line 1), which is now 0.5 inches.

- The *Centered* indicator (line 2) tells AppleWorks to center the text that follows it.
- *Proportional-2* (line 3) prints the text with proportional spacing. Proportional spacing gives each character—skinny “i” or chubby “w”—only the room it needs, unlike standard spacing, which gives every character the same amount of room. The result is characters that are closer together, producing a dense effect. AppleWorks has two proportionally spaced fonts. *Proportional-2* characters are a tad wider than *Proportional-1*.
- The carets before each line in the letterhead (lines 4 to 7) boldface the information that follows, which makes the name, address, city/state/zip, and phone number really stand out.
- *Justified* (line 8) stops the centering and prints the text in the letter with a smooth right edge which, combined with proportional spacing, gives it a polished, typeset look.

The eagle eyes among you will notice the position of the date, which appears at the left edge of the screen but prints in the right-half of the letter in the Figure. Proportional spacing does strange things with indents. To position the date properly, I tabbed so many times that the date wrapped around to the next line. Notice the empty line—without a “blot”—above the date. That line and the date are actually on the same line. I tabbed many times to position the closing salutation and the sender name properly.

The screen may look odd but the lines print perfectly. Don't take my word for it. Turn on your printer and print the letter: Press OA-P to select the Print command, press Return to confirm **Beginning**, select the printer, and confirm one copy. There are no Enter Keyboard carets in this version, so the printer prints to the end without pausing.

WORKING WITH THE TEMPLATE

Load COVER.LETTER and you'll find the same formats and text as COVER.LETTER.EX. Press OA-Right Arrow to zip the cursor to the first character in the generic letterhead. Press OA-E to switch to the overtype cursor and overtype the letterhead with the specifics about you.

Now press OA-Z to turn on the printer options. Press OA-4 to jump the cursor to line 19. Those carets down the left side show a few of the places where the printer pauses for your input. Place the cursor atop the caret in line 17 and you can see **Enter Keyboard** at the bottom of the screen.

Here comes the fun part—working with the printer to produce the form letter in the Figure. Take a few moments to study the text in the shaded areas. Remember, if you make a typo in the text before you press Return, hit the delete key to back up the cursor and erase, then finish typing the entry and hit Return.

Be sure your printer is on. Press OA-P and follow the prompts to start the printing. At the first pause, AppleWorks highlights the first caret and awaits the date. Type **December 10, 1987** and hit Return. At the next pause, type **Mr. James L. Speckles** and hit Return again.

Continue in this way—typing an entry and hitting Return as AppleWorks highlights each caret—until you enter the company, the street address, the state, the name in the salutation, the newspaper name, and the position title.

Customizing the Template

The text in this template is only a framework for the formatting. It's up to you to develop a solid, succinct sales pitch that will make a prospective employer take notice of your special capabilities.

Here are the mechanics of making this letter truly yours:

- Switch to the overtype cursor (a flashing rectangle) and type over the existing text where possible. Avoid overtyping the carets at the start of each line in the letterhead.
- To make room for a new paragraph, press the return key. To delete a paragraph, place the cursor on the first character, press OA-D, then press OA-Right Arrow and OA-Down Arrow to highlight the paragraph, and hit Return.
- If you use stationery, delete the letterhead. Then try various top margin settings until you find the one that balances and blends well with the text.
- To change the top margin setting, place the cursor on the margin indicator, press OA-O to bring up the Printer Options screen, and enter the new setting.
- To insert margin settings, place the cursor in line 1, press OA-O, and enter the setting. Press Escape to return to the letter.
- To delete a margin or option setting, place the cursor on the indicator (it doesn't matter where), press OA-D, and hit Return.
- To get rid of the caret, place the cursor on the character to the right (blot, space, or punctuation) and press the delete key.
- To insert a caret, place the cursor on the character to the left, press OA-O, type **EK**, and hit Return. Press Escape.

Your cover letter should be short, to the point, and contain essential facts only. To check its length, press OA-K and choose your printer. If your letter runs longer than one page, take a long, hard look at all you've said—and pare it down.■

GINGER BANNION
72 Honeysuckle Court
Crabogue, New York 12345
516-555-7998

December 10, 1987

Mr. James L. Speckles
Vice President, Personnel
Harrison Manufacturing Co.
1020 Old Country Road
Abner, New York 11055

Dear Mr. Speckles:

I am enclosing my resume in response to your advertisement in The New York Times for a Computer Parts Salesperson.

I believe my background fits your requirements, and I would welcome the opportunity to present my qualifications in a personal interview. You can reach me at 516-555-7998 after 7 pm weekdays and all day weekends.

Thank you for your consideration. I look forward to hearing from you.

Sincerely,

Ginger Bannion

Figure. The form letter that accompanies a resume. The shaded areas show the information typed from the keyboard during printing.

THREE ACROSS

Print mailing labels three across from your database quickly and efficiently—ideal for large mailing lists.

Category:

Database

THREE ACROSS is a database that prints mailing labels three-across. The format is ideal for large mailing lists where speed and efficiency are a must. The sheets of printed labels can be duplicated easily on a copy machine for archival purposes.

PLAYING AROUND WITH THE EXAMPLE

Load THREE ACROSS.EX from the template disk menu, and AppleWorks brings up the Review/Add/Change screen in multiple-record layout. The records, only three of which are visible now, contain the names of (fictional) contacts who will receive the resume and cover letter described in COVER LETTER. The unkempt appearance of the records is caused by columns too narrow to display each entry completely.

Let's explore the inner workings of this unusual database. Press OA-N to bring up the Change Name/Category screen shown in Figure 1. It contains five categories (Full Name, Title, Company, Street, and City State Zip) repeated three times. Ordinarily, I would keep the first and last names and the city, state, and zip code in separate categories because this makes it possible to arrange records. The nature of this database doesn't permit meaningful arrangements, so it's easier to just combine categories. Now press the escape key.

The multiple-record layout reappears with three of the seven records in this database. The others are waiting in the wings. To see them, press OA-L to bring up the Change Record Layout screen. Here's the first group of categories, which shows the three displayed records. Hold down the tab key to move the cursor to the second group of categories, which shows two records, then the third group, which shows two more.

Category names

```
=====
Full Name      |
Title          | Options:
Company        |
Street         | Change category name
City State Zip | Up arrow  Go to filename
Full Name      | Down arrow Go to next category
Title          | @-I      Insert new category
Company        | @-D      Delete this category
Street         |
City State Zip |
Full Name      |
Title          |
Company        |
Street         |
City State Zip |
=====
```

Type entry or use @ commands

55K Avail.

Figure 1. The categories in the Change Name/Category screen in the THREE ACROSS database.

To get another perspective, press OA-Z to zoom into the single-record layout shown in Figure 2. And here's an odd Record 1—actually three records in one, which is why you can't arrange records in any meaningful way. Spend a few moments studying Record 1, then hit OA-Down Arrow to see Record 2, then do it again to see Record 3.

Now let's take a look at the report format shown in Figure 3. Press OA-P to bring up the Report Menu. Confirm **Get a report format**, then confirm THREE ACROSS. When AppleWorks first presents a labels report format, the categories are in a linear layout (similar to the way they appear in the Change Name/Category screen). The format that greets you now is the result of my using the OA-Arrow keys to slide the second and third groups of categories into a three-across layout—a simple feat.

Viewing the Labels on Screen

To get an idea what the labels will look like on paper, “print” them first to the screen: Press OA-P to bring up the Print the Report screen. Select **The screen** and hit Return twice. And here are six labels. Looking good. Press the Spacebar to display the last label. Now hit Return to return to the Report Format screen.

The Printer Options Settings

Press OA-O and you can see my print settings, which are designed for standard three-across labels that are one inch in length (actually 15/16" in length with 1/16" vertical space between labels). To tell AppleWorks to print continuously with no extra lines at the top or bottom of a page and no form feed between pages, I set the paper length at one inch. A report header at the top of each page of labels is unnecessary, so I deactivated the header setting. These were the only settings needed for my ImageWriter printer. Press the escape key.

The Printer Specification Settings

In a moment you'll print the labels. While most printers will perform with pure precision, others will misbehave (for instance, print one label on a page or leave gaps between labels). All is not lost. Your printer may simply need the top-of-page setting changed to **No**. Here's how to do it: Return to the Main Menu and select **Other Activities**. Select

Use options shown on Help Screen

Q-? for Help

File: THREE ACROSS.EX

REVIEW/ADD/CHANGE

Escape: Main Menu

Selection: All records

Record 1 of 3

=====

Full Name:	James L. Speckles
Title:	Vice President, Personnel
Company:	Harrison Manufacturing Co.
Street:	1020 Old Country Road
City State Zip:	Abner NY 11055
Full Name:	Karen E. McDermott
Title:	Personnel Manager
Company:	All-American Computer
Street:	82 Sunrise Circle
City State Zip:	Handclasp NY 11532
Full Name:	Taeko Yamamoto
Title:	President
Company:	Community Computer Parts
Street:	345 Community Drive
City State Zip:	Redford NY 11982

Type entry or use Q commands

Q-? for Help

Figure 2. Record 1 in single-record layout. Each record is actually a collection of three records.

Specify information about your printer(s), then select **Change printer specifications**. Type **2** to select **Accepts top-of-page commands**, then type **Y** to change the value to **No**. Be sure that item **3—Stops at end of each page**—is also set to **No**.

Printing the Labels

You're all set to print, so turn on your printer. Press OA-P, select your printer, and confirm one copy. The printer whirs and the labels shown in Figure 4 appear. Piece of cake.

```
File: THREE ACROSS.EX          REPORT FORMAT          Escape: Report Menu
Report: THREE ACROSS
Selection: All records

=====
Full Name          Full Name          Full Name
Title              Title              Title
Company            Company            Company
Street             Street             Street
City State Zip     City State Zip     City State Zip

-----Each record will print  6 lines-----
```

Figure 3. The report format that produces three-across mailing labels.

James L. Speckles Vice President, Personnel Harrison Manufacturing Co. 1020 Old Country Road Abner NY 11055	Karen E. McDermott Personnel Manager All-American Computer 82 Sunrise Circle Handclasp NY 11532	Taeko Yamamoto President Community Computer P 345 Community Drive Redford NY 11982
Michael D. Corallo President Computer Corner 876 Main Street Russell NY 11999	Lee Sandrich Personnel Director Sandrich Resources, Inc. 89 Trendy Avenue Abner NY 11055	Robert J. Nissen Owner The Nissen Group, Inc. 905 Lindsey Mall Dorsey NY 11999
Gil Freeman Personnel Manager Coventry Computer 30 Shore Road Coventry NY 10777		

Figure 4. The mailing labels produced by the three-across report format.

WORKING WITH THE TEMPLATE

THREE ACROSS contains the same categories and report format as THREE ACROSS.EX, but no filled-in records, so the first thing AppleWorks tells you after loading is that it doesn't contain anything. Press the return key to enter the Insert New Records mode. And here's an empty Record 1 with room for three records. Fill-in these records and hit Return. AppleWorks now brings up another empty record with room for three more records. And so it goes.

Setting Standard Values

Before you enter your first batch of records, scan them for entries that may be common to most or all of them, such as a title or a city, state, and zip code. You can then define these entries as standard values and AppleWorks will type them into each record for you. To do this, press OA-V to bring up the Set Standard Values screen. Type each standard entry and hit Return after each one. If an entry is truly universal, be sure to type it into each of the three categories in each record. If they are in one-third or two-thirds of the records, simply type them into one or two of the records. Press the escape key to return to the Insert New Records mode.

Deleting Records

In a typical database, you can delete one record at a time. Here, if you delete a record, you actually delete three records. Therefore, to delete one record only, place the cursor on each entry in that record and press OA-Y. Each time you delete a record, you will leave one label empty when you print, which you can either ignore or fill-in when you have a new record.

Final Comments

The oddball format of this database offers freedom as well as restrictions. On the upside, printing three-across labels is faster, cheaper, and more convenient than printing one-across. On the downside, bunching three records into one prevents you from arranging or selecting records, a decided disadvantage. Your best bet is to reserve this version for special activities and use a traditional version (such as the MAIL LIST template in *Success With AppleWorks Vol. 1*) for your everyday activities. ■

CASH FLOW

*How much cash do you have coming in and going out?
Keep a close eye on your business expenses
and dividends on this cash flow spreadsheet.*

Category:

Spreadsheet

Every business experiences events that affect cash balance. When customers pay for goods or services, cash is increased. When the business pays its suppliers, cash is decreased. The difference between inflow and outflow of funds is called cash flow. The ability to forecast cash flow with reasonable certainty is essential to business survival. CASH FLOW can help you project and control cash flow.

PLAYING AROUND WITH THE EXAMPLE

Load CASH FLOW.EX from the template disk menu, and AppleWorks brings up the powerful spreadsheet shown in the Figure. To fit everything on one sheet of letter-size paper, I stretched and shrunk the widths of columns, then set the character size to print at 15 characters per inch. It's time to print now, so turn on your printer. Press OA-P, confirm **All**, and select the printer. Enter today's date and confirm one copy.

The Formats

This spreadsheet shows numbers in a variety of formats. The majority of numbers are large enough to need commas, so I set a standard value of Commas with zero decimal places. Next, I formatted only C5 and C6 for Percentage with one decimal place, knowing that copying the formula in C6 down its column will copy the format also. I gave D5 through D20 the Percentage format with zero decimal places, and cells B39 and C39 the Appropriate format.

=====				
	Proj YEAR 3	P/Sales	Proj YEAR 4	P/Sales
	20% 648,000	100.0%	20% 777,600	100.0%
	35% 226,800	35.0%	35% 272,160	35.0%
	-----	-----	-----	-----
	421,200	65.0%	505,440	65.0%
	=====			
	10% 90,750	14.0%	10% 99,825	12.8%
	16,150	2.8%	19,965	2.6%
	15% 23,805	3.7%	15% 27,376	3.5%
	15% 36,369	5.6%	15% 41,824	5.4%
	28,799	3.2%	28,799	2.7%
	8% 17,496	2.7%	8% 18,896	2.4%
	10% 10,899	1.7%	10% 11,979	1.5%
	8% 8,748	1.3%	8% 9,448	1.2%
	5% 2,205	.3%	5% 2,315	.3%
	10% 14,520	2.2%	10% 15,972	2.1%
	-----	-----	-----	-----
	243,732	17.6%	268,399	14.5%
	177,468	27.4%	237,041	30.5%
	16,103	2.5%	42,093	5.4%
	161,365	24.9%	194,949	25.1%
	=====			
	38,400		23,000	
	19,293		19,293	
	81,920		158,361	
	0		0	
	16,103		42,093	
	=====			
December 1987	CASH FLOW ANALYSIS			
	YEAR 1	P/Sales	Proj YEAR 2	P/Sales
Cash Sales	450,000	100.0%	20% 540,000	100.0%
Cost of Goods Sold	157,500	35.0%	35% 189,000	35.0%
Gross Profit	292,500	65.0%	351,000	65.0%
Cash Disbursements:				
Salaries	75,000	16.7%	10% 82,500	15.3%
Payroll Taxes	15,000	3.3%	16,500	3.1%
Rent	18,000	4.0%	15% 20,700	3.0%
Advertising	27,500	6.1%	15% 31,625	5.9%
Loan Repayment	20,799	4.6%	20,799	3.9%
Insurance	15,000	3.3%	8% 16,200	3.0%
Office Expenses	9,000	2.0%	10% 9,900	1.8%
Utilities/Phone	7,500	1.7%	8% 8,100	1.5%
Maint & Repairs	2,000	.4%	5% 2,100	.4%
Professional Fees	12,000	2.7%	10% 13,200	2.4%
Total Cash Disbursements	201,799	44.8%	221,624	41.0%
Cash Flow Before Taxes	90,701	20.2%	129,376	24.0%
Less: Income Taxes	22,345	5.0%	11,238	2.1%
Cash Flow After Taxes	68,356	15.2%	118,138	21.9%
	=====			
WORK AREA				
Capital Equip Purchase	200,000			
Depreciation (MACRS 5-yr)	40,000		64,000	
Principal Repayment	14,252		16,544	
Taxable Income			64,953	
Income Tax Schedule:				
Less than \$75,000	50000	75000	11,238	
\$75,000 or more			0	
	=====			

Figure. The CASH FLOW spreadsheet. The shaded areas show the base cell locations of the formulas.

About the Formulas

The Table shows the formulas. Here's an explanation of the more exotic ones:

- The depreciation formulas in B34, E34, H34, and K34 follow the MACRS (Modified Accelerated Cost Recovery System) five-year schedule. MACRS provides for a 20% allowance in the first year, 32% in the second year, 19.2% in the third year, and 11.5% in the fourth year.

- This spreadsheet contains several highly sophisticated IF formulas that produce one of two results. The IF function is one of the most versatile tools in the AppleWorks spreadsheet. In a nutshell, the IF function works with a Test, Then, and Else statement separated by commas, all of which are enclosed in parentheses. The Test statement uses a comparison (or logical) operator—*< less than*, *> greater than*, *<= less than or equal to*, *>= greater than or equal to*, *= equal to*, *<> not equal to*—to perform a logical test. If the Test proves true, the Then statement in the formula produces the answer. If the Test statement proves false, the Else statement produces the answer.

- The IF formula in E26 copies one of two calculations produced by other formulas. The formula is: @IF(E37<75000,E39,E40). The Test statement looks at the taxable income calculated by the formula in E37. If this amount is less than \$75,000, the Then statement copies the amount calculated by the formula in E39. If taxable income is \$75,000 or more, the Else statement copies the amount calculated by the formula in E40. The formulas in H26 and K26 work the same.

- The formula in E39 is one of the formulas doing the work that the formula in E26 copies. (To see the entire formula, press OA-U with the cursor on E39.) This formula calculates the income tax when taxable income is less than \$75,000. The corporate tax schedule currently in effect is:

Taxable Income	Tax Rate
First \$50,000	15%
Next \$25,000	25%

The formula must recognize each rate level, or fraction thereof, and apply the proper percentage. To do this, it uses the MIN (minimum) and MAX (maximum) functions to define the upper and lower limits. It uses the AND function to make more than one logical test.

The Test statement looks at taxable income in E37. If this amount is greater than \$0 and less than \$75,000, the Then statement calculates the result. If the amount is less than \$0 (a negative taxable income)

or \$75,000 or more (the province of the formula in E40), the Else statement enters a zero in its cell.

This fascinating formula is:

`@IF(@AND(E37>0,E37<C39),(@MIN(B39,E37)*.15) + @MAX(0,@MIN(B39,E37 - B39)*.25),0)`

AppleWorks limits the length of a formula to 71 characters, but this formula contains 76 characters. How did I manage to squeeze this l-o-n-g formula into one cell, you ask? The answer is careful thought and a bit of ingenuity.

1) The formula works with five-digit numbers (50000 and 75000). If I used those numbers in the formula, I wouldn't have a chance of fitting the formula in one cell. Instead, I entered them in separate cells—50000 in B39 and 75000 in C39. Referring to three-digit cell locations four times made the formula eight characters shorter.

2) The edit line allows more characters than the entry line, so I entered the first part of the formula in its cell, then edited in the rest. (In fact, you can squeeze 78 characters into a formula with this method.) This is the first part, modified to include a needed (but phony) Else statement:

`@IF(@AND(E37>0,E37<C39),(@MIN(B39,E37)*.15),0)`

I switched to the insert cursor, pressed OA-U to start the Edit command, and held down the right arrow key until the cursor was atop the comma before the zero. I now overtyped the phony Else statement with the rest of the formula:

`+ @MAX(0<@MIN(B39,E37 - B39)*.25)`

After proofreading each character, I gingerly pressed the return key—and it worked! I then copied the formula to H39 and K39.

● The formula in E40 is the other formula doing the work that the formula in E26 copies. This formula calculates the current corporate tax on taxable income of \$75,000 or more. The test statement looks at taxable income in E37. If this amount is greater than or equal to \$75,000, the Then statement adds \$13,750 to the result of multiplying taxable income minus \$75,000 by 34% and enters the result in E40. If the amount is less than \$75,000 (the province of the formula in E39), the Else statement enters a zero in its cell. The formula works the same in H40 and K40.

How CASH FLOW Works

Working with CASH FLOW is a lot more simple than it looks. You start by entering the cash sales, cash disbursements, and loan repayments in Year 1 (column B). In the **Proj.** (projection) column (columns D, G, and J) you project an increase, decrease, or status quo for each item over the preceding year. The formulas then calculate the cost of goods sold, gross profit, payroll taxes, total cash disbursements, cash flow before taxes, gross profit, taxable income, corporate income taxes, cash flow after taxes, MACRS depreciation, and—in the second and third years—all of the above plus projected cash sales and disbursements.

Formula Name	Location*	Formula**	Description
Gross Profit	B8	+ B5 – B6	Subtracts the cost of goods sold from the cash sales.
Payroll Taxes	B12	+ B11*.2	Multiplies the salaries by 20%, which approximates the amount of payroll taxes.
Total Cash Disbursements	B22	@SUM(B21.B10)	Adds the cash disbursements. (The formula includes empty cell B10 and the line in B21, which tells AppleWorks to add the entries in any rows you later insert between rows 14 and 20.)
Cash Flow Before Taxes	B24	+ B8 – B22	Subtracts the total cash disbursements from the gross profit.
Cash Flow After Taxes	B28	+ B24 – B26	Subtracts the corporate income taxes for the preceding year from the cash flow before taxes.
MACRS Depreciation	B34	+ B33*.2	Calculates MACRS depreciation on the capital equipment purchase.
Cost of Goods Sold as a Percent of Sales	C6	+ B6/B5	Calculates the cost of goods sold in Year 1 as a percent of cash sales in Year 1.
Cash Sales in Year 2	E5	(B5*(1 + D5))	Calculates the cash sales in Year 2 based on the cash sales in Year 1 multiplied by the projection in D5.
Cost of Goods Sold in Year 2	E6	+ E5*D6	Calculates the cost of goods sold in Year 2 based on the cash sales in Year 2 multiplied by the projection in D6.
Income Taxes in Year 2	E26	@IF(E37<75000, E39,E40)	Copies one of two answers, either the tax calculated by the formula in E39 or the tax calculated by the formula in E40.
Taxable Income	E37	+ B24 + B35 – B34	Adds the cash flow before taxes to the principal paid on the loan, then subtracts depreciation.

Tax on Income of Less Than \$75,000	E39	$\text{@IF}(\text{@AND}(\text{E37}>0, \text{E37}<\text{C39}), (\text{@MIN}(\text{B39}, \text{E37}) * .15) + \text{@MAX}(0, \text{@MIN}(\text{B39}, \text{E37} - \text{B39}) * .25), 0)$	Calculates corporate income tax when taxable income is less than \$75,000.
	E40	$\text{@IF}(\text{E37} >= 75000, 13750 + (.34 * (\text{E37} - 75000)), 0)$	Calculates corporate income tax on taxable income of \$75,000 or more.

* The formula is entered in the first cell shown (base cell) and copied to other cells that perform the same function.

** How the formula looks in the base cell. When it's copied, AppleWorks adjusts the relative cells accordingly.

Table. The formulas in the CASH FLOW spreadsheet.

WORKING WITH THE TEMPLATE

The CASH FLOW template contains the same formats and formulas as CASH FLOW.EX. The cells in column B and the percent cells in columns D, G, and J are your “what-if” playground. This is where you make your projections, change them to your heart’s content, and see instant results. I left the input numbers in column B so you can get started honing your skills without having to type too much.

Spend a few moments studying the information in rows 5 through 22. Since you have no projections in columns D, G, and J yet, sales, cost of goods sold, and cash disbursements are the same each year.

While the input numbers in Year 1 are the steering mechanism, the projections power the spreadsheet. To project an increase, you enter a positive number (for example, **.15**) in a **Proj.** cell. To maintain the status quo, you leave the projection cell empty or enter **.0**. To project a decrease, you enter a negative number (for example, **-.15**).

The 35% in D6, G6, and J6 is the cost of goods sold in Year 2, not an increase. I could have made it part of a formula (for example, $\text{E5} * .35$ in E6). Keeping the percentage separate makes it easy for you to change—you don’t have to edit a formula, you can just type a new number. Patience. All of this will become clearer with a bit of hands-on experience.

Let’s say you project an increase of 8% in salaries in Year 2. Place the cursor on D11. Type **.08** and press Return. Recalculation is turned off, so you won’t see any change yet. Next, you plan to cut back by 3% on your advertising budget. Place the cursor on D14. Type **-.03** and hit Return again. Professional fees? Well, you expect they’ll take

a small upturn. Place the cursor on D20, type **.05**, and hit Return again. Now press OA-K to recalculate.

The numbers in Year 2 and the succeeding years reflect your changes instantly. Refer to the Figure or to CASH FLOW.EX for the input locations and fill in the rest of the projections in columns D, G, and J. Then fill in the other cells: B26 (income tax calculated for the year before the spreadsheet begins), B33, B35, E35, H35, and K35. Every once in a while press OA-K. When formulas need the calculation of formulas below, recalculation can end before every formula has time to calculate properly. Recalculate twice each time you make a change to be sure the results are accurate.

Though it now handles the cash flows for a four-year period, it can work just as well on a quarterly, monthly, or even weekly basis. Customizing CASH FLOW to suit your business operation (or personal situation) is the name of the game. ■

NET WORTH

*Are you worth more than you were last year?
Compare your earnings and assets from year to year
and chart your financial growth.*

Category:

Spreadsheet

NET WORTH is the place to list what you own (your assets) and what you owe (your liabilities) and determine your net worth (how much is left after you deduct your assets from your liabilities). NET WORTH is a comparative statement that lets you compare two years' worth of assets and liabilities side by side, which makes it possible to identify trends—both soft spots and strengths—in the way you handle your money.

PLAYING AROUND WITH THE EXAMPLE

Load NET WORTH.EX from the template disk menu and AppleWorks presents the spreadsheet shown in the Figure. This spreadsheet contains 64 lines of information. To fit everything on one sheet of letter-size paper, which allows for 66 lines, I set the top margin to 0 inches and suppressed the header, which results in one-line top and bottom margins. A small left margin of .3 inches centers the printed spreadsheet vertically. You can see these settings in the Printer Options screen (OA-O). The filename in A1 makes the printed spreadsheet easy to identify. NET WORTH prints at the standard 10 characters to the inch. Now turn on your printer. Press OA-P, confirm **All**, select the printer, and confirm one copy.

The Formats

I set my favorite standard value of Commas with no decimal places, formatted the cells in columns C and F for Percentage with two decimal places, and centered the labels in rows 4 and 37. I entered the vertical

line (produced by the key in the right of the keyboard) in D3 and centered it. When I copied the line down column D, it carried the centering with it.

About the Formulas

The formulas (shown in the Table) are simple and straightforward. They add the amounts in each category, subtract total liabilities from total assets, and, like magic, produce your net worth. Each SUM formula includes the empty cell above the first number in its list and the line below the last number. In this way, if you later insert rows for additional items, AppleWorks will adjust the formulas so they work with the new entries.

Formula Name	Location*	Formula**	Description
Total Liquid Assets	B15, E15, B26, E26	@SUM(B14 . . . B6)	In B15 and E15, adds liquid assets. In B26 and E26, adds personal assets.
Total Other Assets	B34, E34, B58, E58	@SUM(B33 . . . B28)	In B34 and E34, adds other assets. In B58 and E58, adds long-term liabilities.
Total Short-Term Liabilities	B50 and E50	@SUM(B49 . . . B39)	Adds the short-term liabilities.
Total Assets	B60 and E60	+ B15 + B26 + B34	Adds liquid, personal, and other assets.
Total Liabilities	B61 and E61	+ B50 + B58	Adds short-term and long-term liabilities.
Net Worth	B63 and E63	+ B60 – B61	Subtracts total liabilities from total assets.
% of Assets	C7 and assets cells in columns C and F	+ B7/B60	Divides the value of each asset by total assets.
% of Liabilities	C40 and liabilities cells in columns C and F	+ B40/B61	Divides the amount of each liability by total liabilities.

* The formula is entered in the first cell shown (base cell) and copied to the others.

** How the formula looks in the base cell. When it's copied, AppleWorks adjusts the relative cells accordingly.

Table. *The formulas in the NET WORTH spreadsheet.*

WORKING WITH THE TEMPLATE

The NET WORTH template contains the same formats and formulas as NET WORTH.EX. That slew of ERROR messages in columns C and F is caused by formulas trying to divide by empty cells (a mathe-

matical no-no). When you enter your numbers and recalculate (OA-K), the ERROR messages will disappear.

Your assets and liabilities will undoubtedly be different from mine. To customize this spreadsheet, overtype my labels with your labels, insert rows for more items, and delete rows for items that don't apply. Next year, insert a new set of columns to the right of the labels and enter your latest data (don't delete any of the old columns). It's a great way to keep track of financial trends and cycles over the years. ■

File: NETWORTH.EX

COMPARATIVE NET WORTH STATEMENT

ASSETS - What I Own	December 1, 1987		December 1, 1986	
	Value	% Assets	Value	% Assets
Liquid Assets:				
Cash on hand	650	.29%	450	.18%
Savings accounts	834	.37%	432	.17%
Checking accounts	776	.34%	843	.33%
Money market funds	14,440	6.40%	18,950	7.43%
Credit union accounts	1,651	.73%	1,530	.60%
Life insurance cash value	9,800	4.34%	10,800	4.23%
Stocks, bonds	7,600	3.37%	9,500	3.73%
Total Liquid Assets	35,751	15.85%	42,505	16.67%
Personal Assets:				
Residence	96,000	42.56%	103,500	40.58%
Vacation property	23,000	10.20%	26,000	10.19%
Household furnishings	4,750	2.11%	5,000	1.96%
Cars	10,750	4.77%	9,500	3.73%
Jewelry, furs	3,200	1.42%	3,400	1.33%
Computer, peripherals	1,450	.64%	1,250	.49%
Collectibles	1,800	.80%	1,950	.76%
Total Personal Assets	140,950	62.48%	150,600	59.05%
Other Assets:				
Business interests	23,000	10.20%	26,000	10.19%
Certificates of Deposit	5,000	2.22%	10,000	3.92%
IRA & Keogh plans	18,680	8.28%	23,800	9.33%
Profit sharing	2,200	.98%	2,125	.83%
Total Other Assets	48,880	21.67%	61,925	24.28%

LIABILITIES - What I Owe	December 1, 1987		December 1, 1986	
	Amount	% of Liabs	Amount	% of Liabs
Short-Term Liabilities:				
Home mortgage or rent	7,340	6.03%	7,985	6.52%
Other mortgage	1,660	1.36%	1,950	1.59%
Fuel, utilities	2,880	2.36%	3,000	2.45%
Medical, dental bills	775	.64%	1,850	1.51%
Income tax (not withheld)	1,150	.94%	5,600	4.57%
Insur-auto,life,med,home	3,456	2.84%	4,770	3.90%
College loans	2,160	1.77%	2,700	2.20%
Car loans	3,500	2.87%	3,500	2.86%
Credit card charges	1,234	1.01%	1,500	1.22%
Total Short-Term Liabs	24,155	19.83%	32,855	26.83%
Long-Term Liabilities:				
Home mortgage or rent	67,500	55.41%	65,500	53.49%
Other mortgage	8,560	7.03%	8,000	6.53%
College loans	12,000	9.85%	10,000	8.17%
Car loans	9,600	7.88%	6,100	4.98%
Total Long-Term Liabs	97,660	80.17%	89,600	73.17%
TOTAL ASSETS	225,581		255,030	
TOTAL LIABILITIES	121,815		122,455	
NET WORTH	103,766		132,575	

Figure. The NET WORTH spreadsheet. The shaded areas show the base cell locations of the formulas.

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